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(56) Documents cited

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(58) Field of search

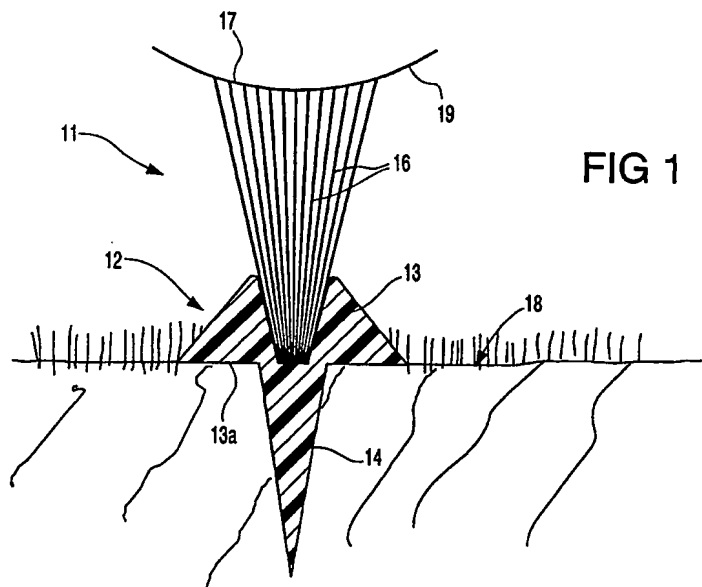
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(54) Golf tee

(57) A golf tee comprises a base 13 for supporting the tee on the ground and flexible support means 16 upstanding from the base and adapted to support a golf ball spaced from the base. The support means 16, are flexibly deformable such that, when a golf ball supported thereon in use is struck, deformation of the support means 16 occurs without substantial force being transmitted to the base 13. The support means may be a single pillar of a resiliently deformable foam material; alternatively it may comprise a plurality of individual elements upstanding from the supporting base.

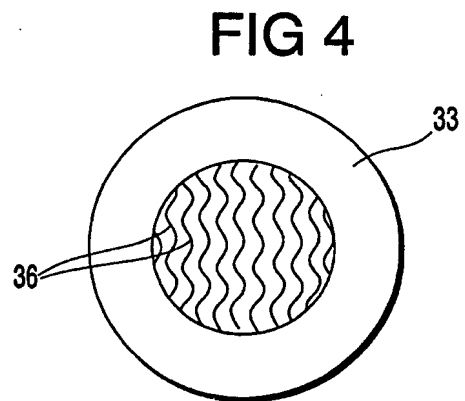
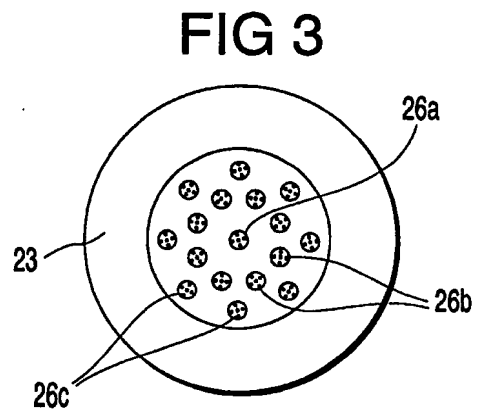
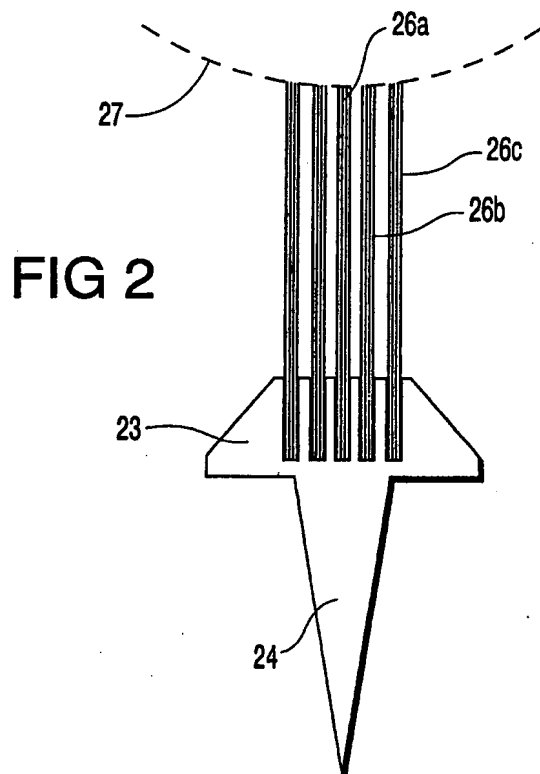
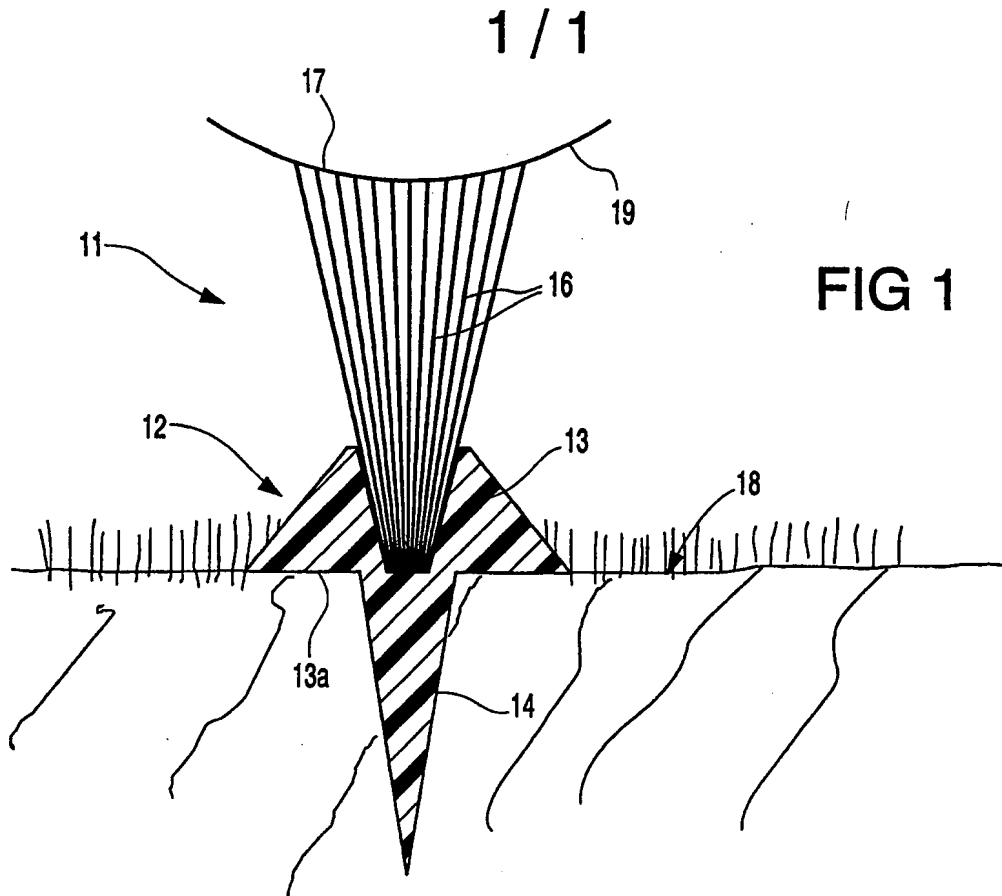


At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

This print takes account of replacement documents submitted after the date of filing to enable the application to comply with the formal requirements of the Patents Rules 1990.

This print incorporates corrections made under Section 117(1) of the Patents Act 1977.

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GOLF TEE

The present invention relates to golf tees.

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It is well known that a golf ball can be hit more effectively in play if it is raised slightly from the ground and for this purpose golf tees have long been used. Most golf tees in current production are moulded
10 from plastics material and comprise a tapered stem which can be inserted in the ground and a head which has an upwardly concave surface for supporting the golf ball.

In use, such tees are often lifted from the ground
15 together with the golf ball when it is struck but, because they are very light, usually fly no more than a few yards before they fall to earth. They can then be retrieved fairly easily on most occasions but, even if they cannot be found, are very cheap so that their loss
20 is no great matter; a golfer will tend to carry several spare tees to replace ones lost in play.

Although, as indicated above, the current golf tees are cheap and disposable, golfers do, nevertheless, waste a
25 certain amount of time searching for them so that they present a degree of irritation and expense to the golfer. An object of the present invention is to provide a golf tee which is less prone to be lifted from the ground in

play.

Accordingly, the present invention provides a golf tee comprising a supporting base and flexible ball support means upstanding from the base and adapted to support a golf ball spaced from the base, the ball support means being deformable such that, when a golf ball supported thereon in use is struck by an instrument, deformation of the ball support means, if struck by the said instrument, can take place without substantial force being transmitted to the base.

In use of such a tee, the kinetic energy of the impact with a striking instrument such as a golf club is not substantially transmitted to the support itself, but a minor part is absorbed, the deformation including flexure of the support means. Little force, if any, will then be transmitted to the base of the tee so that there will be less tendency for it to be lifted from the ground than for prior-art tees.

The base of the tee may be shaped simply to rest on the ground and, as such, would, for example, be useful for practice on a hard surface. If the base were sufficiently light to be conveniently portable it might not remain completely still when a ball supported thereon were struck unless it were provided with additional fixing means, such as an adhesive pad.

The additional weight and/or bulk necessary to provide stability without such fixing means would not, however, constitute a disadvantage for use of the tee solely on a practice range. Indeed, for such use, a base may
5 provided with a plurality of flexible support means, each for supporting a respective golf ball. These would preferably be arranged in a line on a base so that a row of golf balls could be set up and struck in turn by a golfer.

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Tees for use on golf courses or in similar locations would preferably include a spike for insertion in the ground. Naturally, this provision facilitates the positioning of the tee and also minimizes any tendency
15 for it to be lifted from the ground when the golf ball is struck. In addition, the base preferably has a ground-contacting shoulder surrounding the spike which defines the extent to which the spike can be inserted in the ground and also resists the removal of the spike from the
20 ground by a sideways force such as occurs when a golf ball is struck. The surface of the base is also preferably upwardly tapered so as to deflect any direct impact of a golf club with it.

25 As regards the flexible support means, this must have sufficient inherent rigidity to support the weight of a golf ball and hold it at the desired spacing from the base while being sufficiently deformable to absorb the

forces exerted on it when a golf ball is struck without transmitting these to the base in such a manner that the base is lifted from the ground. The support means could comprise a single pillar of, for example, a foam material but, in preferred embodiments of the invention, comprises a plurality of laminar or bristle-like elements upstanding from the base. Such elements may have uniform or tapered longitudinal sections and may be formed integrally with the base or may be provided as an insert which is releasably engageable with the base so that it can, for example, be replaced when worn. An insert for a base for use on a practice range may have a plurality of upstanding flexible support means.

Various arrangements of the support elements are envisaged. Very fine bristle-like elements may, for example, be set in the base in a single group or in several groups arranged in straight lines, in a circle or in several concentric circles. Coarser bristles may be set in the base individually, or formed integrally therewith. Laminar elements may comprise thin upstanding walls arranged in parallel lines, concentric circles or convoluted or corrugated arrangements.

The free edges or tips of the flexible elements may be substantially coplanar and may possibly be bent over to provide the supporting surface for the golf ball. Preferably, however, the edges or tips lie on a curved

surface which is concave towards the golf ball to be supported. The elements may be substantially parallel and vertical in the position of use of the tee or may splay outwardly from a central element. The tee and, more particularly, the flexible support means is conveniently, but not essentially, circular in plan.

The overall height of the tee of the invention is of the same order of magnitude as that of a conventional tee but may be varied according to the size of ball to be supported. Heights of the support means from the base of the order of 2cm to 4cm would, for example, be general.

It is appreciated that the tees of the invention will be more expensive to produce than current golf tees but since they should be less easily lost they may well provide an overall saving in cost. Since, however, they are more expensive and the flexible part could be vulnerable to damage if the tee were simply dropped into a bag or pocket with other articles when not in use, the present invention further provides a container for the tee. Such a container may comprise a tube in which the tee is a close, but not a tight, fit the tube having end closures one of which is preferably sealed and the other removable.

Several embodiments of the invention will now be more particularly described, by way of example, with reference

to the accompanying drawings, in which:

Figure 1 is an axial-sectional view of a golf tee according to a first embodiment of the invention;

Figure 2 is a schematic axial-sectional view of a
5 golf tee according to a second embodiment of the invention;

Figure 3 is a plan view of the embodiment of figure 2; and

10 Figure 4 is a plan view of a golf tee according to a third embodiment of the invention.

With reference to Figure 1 of the drawings, a golf tee is shown generally indicated 11. The tee 11 includes a
15 moulded plastics base 12 having a frusto-conical portion 13 from the larger face 13a of which projects a coaxial spike 14. The smaller-diameter face of the frustum 13 has a coaxial tapered recess 15 which serves as a seat for a plurality of bristles 16 which are force-fitted
20 into it.

The bristles 16 splay outwardly from the recess 15 and their free ends, remote from the base 12, are cut to present a part-spherical concave surface 17, also coaxial
25 with the base 12.

The overall height of the tee 11 is 60mm, the maximum diameter of the base 13 is 20mm and bristle surface 17 is

spaced approximately 40mm from the larger 13a of the base 13. These measurements could, however, readily be varied.

5 In use, the spike 14 is inserted into the ground, indicated at 18, so that the bristles 16 project upwardly and present the surface 17 to support a golf ball indicated 19. In practice, the bristles will deform slightly to accommodate the weight of the ball 19. When
10 the ball 19 is struck by a golf club, the bristles 16 will flex, absorbing the force exerted by the ball and/or club. On most occasions, insufficient force would be transmitted from the bristles to the base 12 to lift it from the ground 18.

15

If the club hits the conical surface of the base portion 13 it will tend to deflect upwardly, exerting a sideways and downwards force on the base 12. Any tendency for the tee to be forced sideways will be resisted by the
20 engagement of the spike 14 in the ground and the abutment of the lower face 13a of the base portion 13 with the ground.

It will be appreciated that the bristles 16 may be of
25 natural fibre, of animal or vegetable origin, or preferably of plastics material.

With reference to Figure 2. and 3 of the drawings, a

second embodiment of a golf tee is shown which differs from that of Figure 1 essentially only in the arrangement of bristles. Similar features are indicated by the same reference numerals increased by 10.

5

In this embodiment the bristles indicated 26 are grouped in bundles of parallel fibres set into the base 23. The bundles include a central bundle 26a surrounded by two concentric rings of bundles 26b and 26c respectively. In Figure 2 only the fibre bundles which lie in the plane of the section are shown for simplicity of illustration: all of the bundles are, however, shown in Figure 3. The fibres in the bundles 26b are of the same length but slightly longer than those in the central bundle 26a while the outer fibres again lie substantially on a part-spherical, concave surface indicated by the broken line 27 of substantially the same radius as that of a golf ball.

20 With reference to figure 10 of the drawings, a further embodiment of a golf tee is shown purely diagrammatically. Features similar to those shown in Figure 1 are indicated by the same references increased by 20.

25

The base 33 of this embodiment is similar to the base 13 of Figure 1 but the bristles 16 are replaced by a plurality of upstanding, flexible laminar elements 36

formed integrally with the base 33. The elements 36 shown have corrugated profiles in plan but could, alternatively, have straight profiles or be formed as concentric circles or have other conformations in plan.

CLAIMS

1. A golf tee comprising a supporting base and flexible
5 ball support means upstanding from the base and adapted
to support a golf ball spaced from the base, the ball
support means being deformable such that, when a golf
ball supported thereon in use is struck by an instrument,
deformation of the ball support means, if struck by the
10 said instrument, can take place without substantial force
being transmitted to the base.
2. A golf tee as claimed in Claim 1, in which at least
part of the impact with the instrument by which the golf
15 ball is struck is absorbed in use by deformation of the
ball support means.
3. A golf tee as claimed in Claim 2, in which the
deformation includes flexure of the ball support means.
20
4. A golf tee as claimed in any of Claims 1 to 3, in
which the supporting base of the tee is shaped to rest on
the ground.
- 25 5. A golf tee as claimed in Claim 4, in which the
supporting base of the tee is provided with additional
fixing means, such as an adhesive pad.

6. A golf tee as claimed in any of Claims 1 to 5, in which the supporting base of the tee has sufficient weight and/or bulk necessary to provide stability without fixing means.

5

7. A golf tee as claimed in any of Claims 1 to 6, in which a common base is provided with a plurality of deformable ball support means, each for supporting a respective golf ball.

10

8. A golf tee as claimed in Claim 7, in which the said plurality of deformable ball support means are arranged in a line on the common base so that a row of golf balls can be set up and struck in turn by a golfer.

15

9. A golf tee as claimed in any of Claims 1 to 8, including a spike for insertion in the ground.

20

10. A golf tee as claimed in Claim 9, in which the base has a ground-contacting shoulder surrounding the spike which defines the extent to which the spike can be inserted into the ground and also resists the removal of the spike from the ground by a sideways force such as occurs when a golf ball is struck.

25

11. A golf tee as claimed in any of Claims 1 to 10, in which the base is upwardly tapered so as to deflect any direct impact of a golf club with it.

12. A golf tee as claimed in any of Claims 1 to 11, in which the deformable ball support means have sufficient inherent rigidity to support the weight of a golf ball and hold it at the desired spacing from the base while
5 being sufficiently flexible to absorb the forces exerted on it when a golf ball is struck without transmitting these to the base in such a manner that the base is lifted from the ground.

10 13. A golf tee as claimed in Claims 1 to 12, in which the ball support means comprise a single pillar of a resiliently deformable foam material.

14. A golf tee as claimed in any of Claims 1 to 12, in which
15 the ball support means comprises a plurality of individual elements upstanding from the supporting base.

15. A golf tee as claimed in Claim 14, in which the said laminar elements have uniform or tapered longitudinal
20 sections and are formed integrally with the base or set into the base.

16. A golf tee as claimed in any of Claims 12 to 15, in which the flexible ball support means are provided as an
25 insert which is releasably engageable with the base so that it can be replaced when worn.

17. A golf tee as claimed in Claims 1 to 16, in which

the ball support means comprise fine bristle-like elements set in the base in a single group or in several groups arranged in straight lines, in a circle or in several concentric circles.

5

18. A golf tee as claimed in any of Claims 14 to 17, in which the free edges or tips of the elements constituting the ball support means are substantially coplanar or bent over to provide a support surface for a golf ball.

10

19. A golf tee as claimed in claims 14 to 16, in which the said upstanding laminar elements constituting the ball support means are arranged in parallel lines, concentric circles or convoluted arrangements.

15

20. A golf tee as claimed in any of Claims 14 to 19, in which the edges or tips of the individual elements lie on a curved surface which is concave towards the golf ball to be supported.

20

21. A golf tee as claimed in any of Claims 14 to 20, in which the said individual elements are substantially parallel and vertical in the position of use of the tee.

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22. A golf tee as claimed in any of Claims 14 to 21, in which the flexible elements splay outwardly from a central element.

23. A golf tee substantially as hereinbefore described with reference to, and as shown in, the accompanying drawings.

-15-

Patents Act 1977
Examiner's report to the Comptroller under
Section 17 (The Search Report)

Application number

GB 9216493.8

Relevant Technical fields

(i) UK CI (Edition K) A6D

(ii) Int CI (Edition 5) A63B

Databases (see over)

(i) UK Patent Office

(ii) ONLINE DATABASES: WPI

Search Examiner

R A H CASLING

Date of Search

30 SEPTEMBER 1992

Documents considered relevant following a search in respect of claims

1 TO 22

Category (see over)	Identity of document and relevant passages		Relevant to claim(s)
X/P	GB 2252049 A	(GILCHRIST) see page 3 line 4 et seq	Claims 1, 2, 3, 9, at least
X	GB 1294662	(WILSON) see whole document	Claims 1, 2, 3, 14 at least
X	US 4976431	(GUENTHER) see whole document	Claims 1, 2, 3, 4, 9 at least
X	US 4418916	(N MATSUURA) see column 3 line 35 et seq	Claims 1, 3, 9 at least
X	US 3645537	(PARENTEAU) see column 1 line 14 et seq	Claims 1, 2, 3, 9, 13 at least
X	US 3559998	(KELLY) see column 3 line 38 et seq	Claims 1, 2, 3, 9 at least
X	US 3554543	(DI LAURA) see column 2 line 10 et seq	Claims 1, 2, 4, 13 at least

SF2(p)

HCS - doc99\fil000388

Category	Identity of document and relevant passages	Relevant to claim(s)

Categories of documents

X: Document indicating lack of novelty or of inventive step.

Y: Document indicating lack of inventive step if combined with one or more other documents of the same category.

A: Document indicating technological background and/or state of the art.

P: Document published on or after the declared priority date but before the filing date of the present application.

E: Patent document published on or after, but with priority date earlier than, the filing date of the present application.

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Databases: The UK Patent Office database comprises classified collections of GB, EP, WO and US patent specifications as outlined periodically in the Official Journal (Patents). The on-line databases considered for search are also listed periodically in the Official Journal (Patents).